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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,532	01/15/2004	Masayuki Okuzawa	0020-5217P	4569

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EXAMINER	
SCHATZ, CHRISTOPHER	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/757,532	OKUZAWA ET AL.	
	Examiner	Art Unit	
	Christopher T. Schatz	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 7-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Prosecution on the merits of this application is reopened on claims 1-5 and 7-11 considered unpatentable for the reasons indicated below.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al. (JP Publication No. 2002-283313), Stover '582, Kawai et al. '414, and Fuji et al. (newly cited, GB 20134737). Ueda et al. discloses a method of manufacturing a fiber board 1 from kenaf fibers (paragraph 1), said method comprising: impregnating (drawing 1c) said fiber board with an adhesive 2 by supplying said adhesive to said kenaf fibers; drying said impregnated board by supplying a warm air stream at a specified temperature; and the temperature of said warm air stream is between 40 and 120 degrees C (paragraph 0037), and said fiber board is sucked from one side thereof during the application of heat (figure 7, paragraph 0065 – paragraph 0066).

Ueda et al. does not explicitly disclose a method of producing a fiber board wherein said method comprises: a separating process for separating the bast portion of said kenaf plant from the stem core portion; obtaining kenaf fibers from said bast portion by defibrating said bast portion of said kenaf; aggregating said kenaf fibers such that said kenaf fibers have an average length of 10 – 200 mm and an average diameter of 10 – 300 mm; supplying said kenaf fibers with a thermosetting adhesive during said impregnating step; a molding process wherein the fiber board obtained from said air drying process is molded by heating said fiber board under pressure to a fiber board have a density of 600 – 900 kg/m^3.

Stover discloses a method of separating said stem core from said bast portion of said kenaf plant, and further separating said kenaf fibers from said bast portion (column 7, lines 56-66). Stover further discloses that using said kenaf fibers separated from said bast portion is advantageous for fiber board production because said kenaf fibers have a low density and high tensile strength (column 1, lines 20-21), as well as unique economic advantages (column 1, lines 35-39).

Kawai et al. et al. discloses a method of producing a fiber board from kenaf fibers, said method comprising: aggregating said kenaf fibers defibrated from said bast portion such that said kenaf fibers have an average length of 6 – 400 mm and an average diameter of 50 – 1000 Tm (column 4, lines 41-45); supplying said kenaf fibers with a thermosetting adhesive (column 5, line 25) during said impregnating step; a molding process wherein said fiber board obtained from said air drying process is molded by heating said fiber board under pressure (column 5, lines 18-21) to produce a fiber board having an average density of 500 – 900 kg/m^3 (column 5, line 36). Therefore at the time of the invention, it would have been obvious to a person of ordinary skill in

the art to separate the bast portion from the stem core and to further separate the kenaf fibers from the bast portion before the production of said fiber board. Using said kenaf fibers separated from said bast portion yields a fiber board with a higher tensile strength, and a less expensive production process as disclosed by Stover above.

Furthermore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to aggregate said kenaf fibers defibrated from said bast portion such that said kenaf fibers have a specified average length of 6 – 400 mm and an average diameter of 50 – 1000 Tm. The specified length and diameter ranges are ideal, as disclosed by Kawai et al., for the production of a fiber board because using fibers below the specification limit will produce a fiber board that is not strong enough (column 4, lines 12-13); and using fibers above the specification limit will inhibit uniform distribution of said adhesive (column 4, lines 26-33). It also would have been obvious to a person of ordinary skill in the art to use a thermosetting adhesive for said adhesive agent because, as disclosed by Kawai et al. et al., it is well-know in the art to use said thermosetting adhesive during the impregnating step of said method (column 5, lines 25-26).

Additionally, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to employ a molding process wherein said fiber board obtained from said air drying process is molded by heating said fiber board under pressure to produce a fiber board having an average density of 500 – 900 kg/m^3. The advantage, as disclosed by Kawai et al. et al., of molding said fiber board to said specified density range is that said density range provides the optimal strength for said manufactured fiber board (column 5, lines 33-45).

Finally, it is known in the art suck an inner portion of a fiber mat from one side during a drying process. For example, Fuji et al. discloses a method of manufacturing a fiberboard wherein an inner portion of a fiber mat is sucked from one side during a drying process (page 1, lines 112-115). Applying suction from one side of the fiber mat is advantageous because, as disclosed by Fuji et al., doing so aids in the removal of water from the fiber mat (page 1, lines 114-115). Therefore, at the time of the invention it would have been obvious to a person of ordinary skill in the art to suck an inner portion of a fiber mat from one side as taught by Fuji et al. above to remove excess water in the process of making a fiberboard as set forth above by Ueda et al., Stover, and Kawai et al.

As to claims 2 and 3, Kawai et al. et al. discloses a method as applied to claim 1 wherein the amount of said thermosetting adhesive impregnated in said fiber board during said impregnation process is less than 130% relative to the weight of said fiber board (column 5, lines 30-33). Kawai et al. et al., however, does not disclose a method of pressing said impregnated fiber board as applied to claim 2 wherein said pressing occurs by passing said impregnated fiberboard between a pair of rollers 8. Ueda et al. et al. discloses a method of passing said fiber board impregnated with said thermosetting adhesive through a pair of rollers. Therefore at the time of the invention, it would have been obvious to a person of ordinary skill in the art to pass said fiber board impregnated with said specified amount, as disclosed by Kawai et al. et al., of said thermosetting adhesive. It is advantageous to pass said impregnated fiber board through rollers because, as disclosed by Ueda et al. , said rollers provide an efficient way to uniformly distribute said thermosetting adhesive (paragraph 47). As to claim 4, Ueda et al. discloses a method as applied to claim 1 wherein the moisture content of said fiber mat is adjusted to less

than 25% by weight before supplying said thermosetting adhesive agent (paragraph 50). As to claims 5 and 6, Ueda et al. discloses a method as applied to claim 1 wherein the temperature of said warm air stream is between 40 and 120 degrees C (paragraph 37), and said warm air stream is passed by said fiber board in the opposite direction that said fiber board is being sucked from (paragraph 0057).

2. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al., Stover, Kawai et al., and Fuji et al. as applied to claim 1 above, and in further view of Simonson et al. '511. Ueda et al., Stover, Kawai et al., and Fuji et al. disclose a method a stated in claim 1 above, but the references fail to disclose a method wherein said kenaf fibers separated from the bast portion are adjusted such that the moisture content of said separated kenaf fiber is adjusted to 10 –50 weight percent. Simonone discloses a method of defibrating said fibers for the purpose of producing a fiber board, and adjusting said fibers obtained from said defibration method to a moisture content of 30-60 weight percent before said impregnation step occurs (column 2, lines 59-63). Adjusting said moisture is advantageous, because, as disclosed by Simonone, said adjustment yields a fiber board with greater moisture resistance, thus decreasing the risk that said fiber board will crack and rot. Therefore at the time of the invention, it would have been obvious to a person of ordinary skill in the art to adjust said moisture content of said defibrated fiber to 30-60 weight percent as disclosed by Simonone above to increase moisture resistance in the process of producing a fiberboard as set forth above by Ueda et al., Stover, Kawai et al., and Fuji et al.

3. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al., Stover, Kawai et al., and Fuji et al., as applied to claim 1 above, and in further view of Seale et al. '756.

Ueda et al., Stover, Kawai et al., and Fuji et al. disclose a method as stated in claim 1 above, but the references fail to disclose a method wherein a second adhesive agent whose impregnability is lower than that of said thermosetting adhesive agent is applied to the surface of said fiber board after said molding process. Ueda et al., Stover, Kawai et al., and Fuji et al. also do not disclose a method wherein a fine fiber sheet having fibers with a diameter smaller than that of said kenaf fibers constituting said fiber board is laminated and heated under pressure on the surface of said fiber mat.

Seale et al. discloses a method for producing a kenaf fiber board as disclosed in claim 1, said method additionally comprising: applying a second adhesive agent with a lower impregnability than said first adhesive agent (column 6, lines 6-8) to said fiber board after said molding step; laminating a fine fiber sheet with fibers having a diameter smaller than that of said kenaf fibers constituting said fiber board and heating said laminate under pressure (column 5, lines 65-67). Adding the above said steps to the method disclosed in claim 1 is advantageous, as disclosed by Seale et al., because it provides said fiber board with greater strength (column 1, lines 1 1-12) and better smoothness and uniformity (column 5, lines 50-5 1). Therefore at the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply a second adhesive agent with a lower impregnability than said first adhesive to said fiber board after said molding step as taught by Seale et al. above to increase the strength of a fiberboard in the process of manufacturing a fiberboard as set forth above by Ueda et al., Stover, Kawai et al,

and Fuji et al. Additionally, at the time of the invention, it would have been obvious to laminate a fine fiber sheet having fibers with a diameter smaller than that of said kenaf fibers constituting said fiberboard and heat said laminate under pressure.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al., Stover, Kawai et al., Fuji et al., and Seale et al. as applied to claims 1 and 9, and in further view Onishi et al. (JP Publication No. 2000-263519) Ueda et al., Stover, Kawai et al., Fuji et al., and Seale et al. disclose a method as stated in claims 1 and 9 above, but the references fail to disclose a method wherein holes are punched through said fine fiber sheet after said sheet and said laminate are heated under pressure.

Onishi et al. discloses a method as specified in claims 1 and 9, and also discloses punching holes through said fine fiber sheet after said sheet and said laminate are heated under pressure (paragraph 0022). The punching of said holes is advantageous, as disclosed by Onishi et al., because it allows the adhesive to distribute into said holes, thus increasing the rigidity and dimensional stability (paragraph 0022). Therefore at the time of the invention, it would have been obvious to a person of ordinary skill in the art to punch holes in the fine fiber sheet as taught by Onishi et al. above to increase the rigidity of a fiberboard in the process of manufacturing a fiberboard as set forth above by Ueda et al., Stover, Kawai et al, Fuji et al., and Seale et al.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda et al., Stover, Kawai et al., and Fuji et al., as applied to claim 1 above, and in further view of Betzner et al. '436. Ueda et al., Stover, Kawai et al., and Fuji et al. disclose a method as stated in claim 1 above, but the references do not reveal a method wherein said thermosetting adhesive agent is a

phenolic resin comprising of 10-40 weight percent monomer, and 60-90 weight percent polymer, said monomer having a molecular weight of 400-700 and said polymer having a molecular weight of 200-2000. Betzner et al. revels an adhesive used to impregnate fibers for the purpose of creating a fiber board wherein said adhesive agent has a molecular weight of 300-2000 for all possible polymer/monomer weight percent combinations. The use of said adhesive agent with said molecular weight is advantageous because, as disclosed by Betzner et al., said molecular weight range provides said adhesive agent with the optimal viscosity and volatility for producing a durable fiber board (column 6, lines 1-12). Therefore at the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an adhesive agent to impregnate said fibers wherein said adhesive agent has a molecular weight of 300-2000 as taught by Betzner et al. above to optimize the properties of the adhesive agent in the process of manufacturing a fiberboard as set forth above by Ueda et al., Stover, Kawai et al., and Fuji et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Christopher T. Schatz** whose telephone number is **571-272-1456**. The examiner can normally be reached on 8:00-5:30, Monday -Thursday, 8:00-4:30 Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on 571-272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CTS

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